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INTERNATIONAL UNION, UNITED AUTOMOBILE, AEROSPACE & AGRICULTURAL IMPLEMENT WORKERS OF AMERICA – UAW

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July 27, 2021

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Office of Land and Emergency Management (5104A)
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Comments on Federal Register Notice Number 2021-11280, "Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act; Notice of Virtual Public Listening Sessions," Docket Number EPA-HQ-OLEM-2021-0312

Submitted by Ray Curry, President, International Union, UAW via Regulations.gov

Dear Ms. Grant:

The International Union, UAW representing one million active and retired members, many of whom work in facilities covered by the Risk Management Plan (RMP) standard and/or live in the vulnerability zone of such facilities, submits these comments to Docket ID Number EPA-HQ-OLEM-2021-0312.

In 2019, under the previous administration, EPA repealed most of the amendments to the Risk Management Plan Rule the agency had promulgated less than three years before. The purpose of the amendments had been "to improve chemical process safety [including worker safety], assist local emergency authorities in planning for and responding to accidents, and improve public awareness of chemical hazards at regulated sources[1]." Among other provisions, the amendments included requirements for Safer Technology and Alternatives Analysis (STAA) as well as worker training. The repeal of these amendments was based on flawed data and analysis, incorrect assumptions, and arbitrary and capricious reasoning. In repealing the amendments, EPA ignored or improperly addressed evidence that did not support repeal. In addition to the ignored or improperly addressed evidence, there is new evidence that demonstrates the urgent need for EPA to develop and adopt a stronger RMP rule. Much of this evidence is presented and discussed below.

[1] 82 Federal Register 4594 (January 13, 2017)

An improved RMP rule is urgently needed to protect workers, communities, and businesses by finally preventing chemical releases

A new rule should include the following:

- To bolster the safety of workers, the rule should require worker and union participation in incident prevention, investigation, and response. It should require worker training in order to enhance safety and facilitate meaningful participation.

- It should prevent chemical disasters by ensuring hazard reduction**,** not merely improved response to preventable disasters. This should be done by requiring the identification and use of available inherently safer methods to eliminate or reduce catastrophic hazards.

- The rule should address disproportionate, cumulative impacts for communities with multiple RMP facilities.

- The rule should restore and implement essential requirements for safer chemicals, technologies and practices, worker training, third-party audits, root cause analysis, deregistration analysis, and emergency exercises.

Worker Participation

RMP reforms should include increased participation of workers and their representatives in RMP plan development and training in incident prevention, response, and investigation, as has been successful under the California refinery rule framework. Moreover, it is necessary for workers to be able to report hazards and "near-misses" anonymously with protection against retaliation. RMP facilities should be required to respond immediately to present and imminent threats, including those related to extreme weather and other natural disaster risks.

EPA should issue specific provisions in a new rule that enable workers and their unions to participate in prevention of chemical releases by:

1) Stating that "In consultation with employees and employee representatives, the facility owner and operator shall provide for meaningful employee participation when developing, implementing, maintaining, and evaluating **all** RMP activities, including hazard assessment, the prevention program, and emergency response activities and shall keep current a written plan that describes such opportunities."

2) Requiring facility owners and operators to disseminate RMP information to employees and their representatives, including Process Hazard Analyses (PHAs), safer alternatives assessments, incident investigation reports, third-party audits, emergency response plans, and other RMP information.

3) Requiring facility owners and operators to assess the impact of a worst-case release on their own employees and contractors **and** on those of nearby industrial facilities when conducting Process Hazard Analyses.

4) Issuing, as called for by the Chemical Safety and Hazard Investigation Board (CSB), a "stop work authority" provision so workers and their representatives may engage management to temporarily halt processing units and operations that pose a catastrophic risk.

5) The 1990 Clean Air Act amendments require that employers allow employees and their representatives the right to participate in Section 112(r) inspections under the same terms that they can participate in OSHA inspections. EPA guidance explains this right. The new RMP rule should also explain how employees and their representatives can participate during EPA inspections and audits.

6) RMP facilities should be required to report data to EPA that can be made accessible to workers, their representatives, and fence line communities to reduce harm when preparing for and responding to chemical in incidents. EPA should require RMP facilities to undertake, and facilitate the participation of first responders in, emergency response exercises (including field, tabletop, and community notification exercises) on clear, regular, and enforceable timetables (i.e., restore and strengthen all these elements of the 2017 Amendments). These rule elements and exercises should include information and procedures that are responsive to the particular risks of natural disasters a for a given facility.

Require hazard reduction to the greatest extent feasible through identification and use of available inherently safer methods to eliminate or reduce catastrophic hazards.

Any new RMP rule should require hazard reduction to the greatest extent feasible, especially for the most hazardous facilities, where known safer processes available, and
in communities with multiple facilities or with environmental justice concerns. Too many facilities focus solely on incident response or administrative controls. Many blame workers for deadly events that, in fact, result from the failure to fund and implement prevention measures, or the failure to convert to available safer processes. In developing a badly needed new RMP rule, EPA should rely on best practice approaches to hazard reduction, especially successful state and local programs like the 2017 California Process Safety Management regulation for petroleum refineries, the Contra Costa County (CA) Industrial Safety Ordinance, and the New Jersey Inherently Safer Technology rule.

EPA should make the routine reporting and dissemination of solutions data an integral part of the RMP program and rule. Solutions data means the successful practices companies are using to reduce and remove RMP chemical hazards. EPA should incorporate solutions data into the RMP program in at least five basic ways. Solutions data should be:

1) Reported on RMP deregistration forms;
2) Summarized from any safer alternatives analyses in RMPs submitted to EPA;

3) Required from every RMP facility (not just oil, chemicals, and paper);
4) Included in public meetings after incidents;
5) Compiled into a public EPA hazard reduction clearinghouse.

Address Cumulative Hazards

Many communities host multiple (in some cases dozens) of RMP facilities with overlapping vulnerability zones, and in some cases in very close proximity to each other. These cumulative hazards and the potential for simultaneous or chain reaction incidents, especially during extreme weather events or natural disasters that affect all facilities simultaneously, are not currently addressed in the RMP program at all. As is well documented, these communities are disproportionately communities of color and low-income communities – the very overburdened and disproportionately impacted communities that the Biden Administration and EPA have committed to protect.

A new RMP rule must address these cumulative hazards through common sense measures, including:

- Requirements that facility worst-case scenario analyses, response plans, and hazard reduction plans must account for the presence of other RMP facilities in the vulnerability zone; and

- Requirements for certain facilities in such communities to implement certain prevention methods (i.e., new facilities; facilities with incidents in last 5 years; Program 3 facilities; facilities in communities with multiple sources; facilities using particularly hazardous chemicals or with available safer alternatives; etc.).

Compliance

Compliance mechanisms should be transparent and easily enforceable. They should include prompt deadlines as well as clear definitions of facility and EPA obligations. Compliance reporting to EPA should be made publicly accessible. Requirements should include appropriate testing and assessment for worst-case failure scenarios of critical components and systems, testing and assessment of mitigation measures, inspections and reports, and replacement of components like corrosion-vulnerable pipes and equipment. The EPA should prioritize health and cumulative impact assessment and target regulatory enforcement for RMP facilities in areas vulnerable to natural disaster risks and near communities with environmental justice concerns.

Program Expansion

EPA should expand the universe of hazardous chemicals that trigger RMP requirements, including (and especially) flammable, explosive, and other reactive chemicals. UAW members have been injured and killed in several combustible dust explosions in the primary metals sector, in

pharmaceutical manufacturing and in the metals recycling industry. EPA must expand the RMP rule to encompass combustible dust and the industry sectors where these hazards are generated. Moreover, the Agency should require additional protections for facilities and processes sited in areas vulnerable to climate and natural disaster risk, or in communities already overburdened with multiple RMP facilities and/or other chemical hazards and exposures.

New Data and Evidence

EPA has requested new data and evidence. Fortunately, there is new evidence from EPA's own Risk Management Plan Database. One important question is whether the existing regulations are effective. Judah Prero of the American Chemistry Council asserts that "a lack of sufficient regulations is not the problem." His assertion is based on the claim that "From 2007-2016, EPA data show that there were 1,368 RMP accidents reported by a total of 947 facilities. RMP accidents declined steadily during this time from 204 in 2007 to 99 in 2016, representing a 45.3% reduction." There are several problems with this claim. One of them is that Prero's assertion that there were 99 accidents in 2016 is **inaccurate**. According to EPA's RMP database, as of May 2021,123 impact accidents had been reported to EPA for the year 2016.

Prero's assertion that there were 99 accidents in 2016 comes from data reported by EPA in the 2019 *Regulatory Impact Analysis* (RIA) for the RMP Reconsideration Rule[2]. According to EPA, the 2004-2013 data were extracted from the RMP database in early 2015 and the 2014-2016 data were extracted in March 2018. The table below compares the 2019 RIA data to data from two subsequent downloads of the RMP database, one from September 2019 and one from May 2021. It shows that data reported in the 2019 RIA underestimate the number impact accidents for all years subsequent to 2009. Hence any claims made about a decline in accidents that refer to years after 2009 rely on incomplete data if they depend on the 2019 RIA.

Comparison of Number of Impact Accidents Reported in EPA's 2019 Regulatory Impact Analysis with the Number Identified from the September 2019 Database and the May 2021 Database

Year	Number of Accidents Reported in EPA's 2019 Amendments RIA Dataset	Number of Accidents According to September 2019 Database	Difference between 2019 Database and RIA	Number of Accidents According to May 2021 Database	Difference between 2021 Database and RIA
2004	197	198	0.51%	198	0.51%
2005	152	151	-0.66%	151	-0.66%

[2] U.S. Environmental Protection Agency (2019, Nov. 18). *Regulatory Impact Analysis, Reconsideration of the 2017 Amendments to the Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act, Section 112(r)(7)* [Final Rule]. Washington, DC: USEPA.

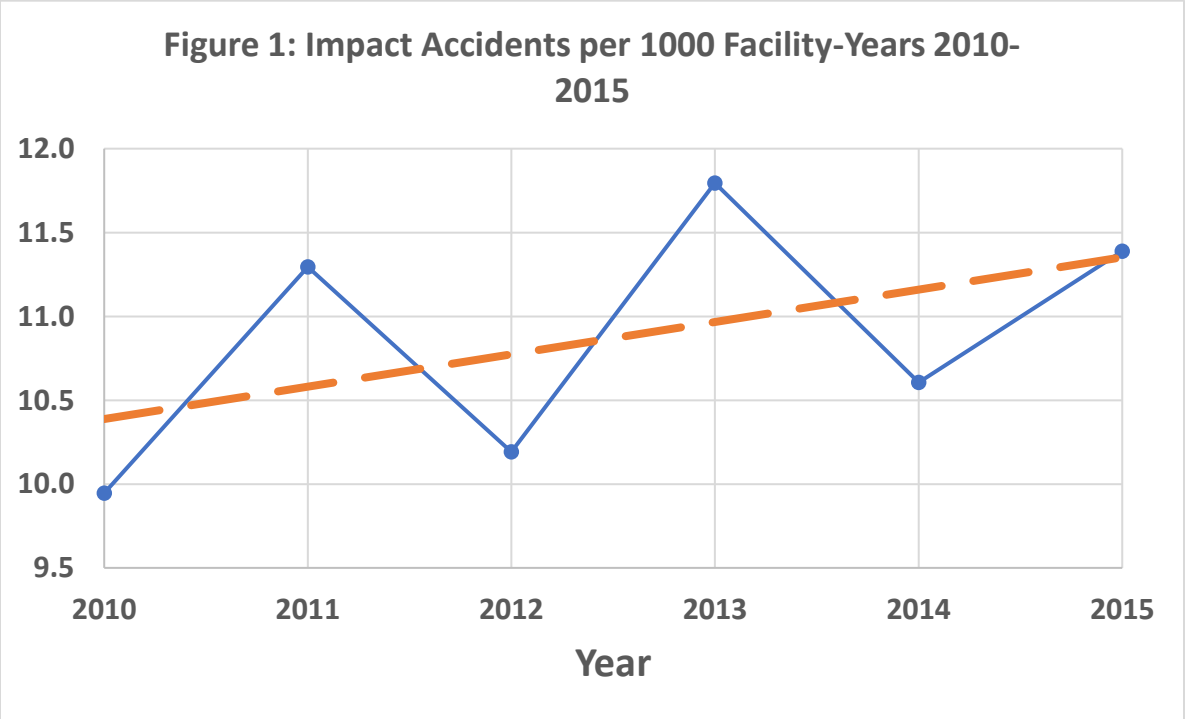
Comparison of Number of Impact Accidents Reported in EPA's 2019 Regulatory Impact Analysis with the Number Identified from the September 2019 Database and the May 2021 Database					
Year	**Number of Accidents Reported in EPA's 2019 Amendments RIA Dataset**	**Number of Accidents According to September 2019 Database**	**Difference between 2019 Database and RIA**	**Number of Accidents According to May 2021 Database**	**Difference between 2021 Database and RIA**
2006	140	137	-2.14%	137	-2.14%
2007	204	203	-0.49%	203	-0.49%
2008	168	168	0.00%	168	0.00%
2009	149	149	0.00%	149	0.00%
2010	128	130	**1.56%**	130	**1.56%**
2011	138	147	**6.52%**	147	**6.52%**
2012	118	131	**11.02%**	131	**11.02%**
2013	123	150	**21.95%**	150	**21.95%**
2014	128	137	**7.03%**	137	**7.03%**
2015	113	138	**22.12%**	145	**28.32%**
2016	99	116	**17.17%**	123	**24.24%**
Year		**Number of Accidents According to September 2019 Database**		**Number of Accidents According to May 2021 Database**	**Difference between 2019 and 2021 Database**
2017	-	89	-	99	**11.24%**
2018	-	72	-	89	**19.10%**
2019	-	31	-	98	**216.13%**

It is not surprising that data extracted in early 2015 undercount accidents that occurred after 2009. According to EPA, "[O]riginally there was no requirement to update RMP accident information until the next RMP submission was due, which normally occurs every five years. Although EPA changed this requirement in 2004 to require owners and operators to update their RMP accident history information within 6 months of any reportable accident, not all sources consistently comply with this requirement."[3] This means that we would not expect accident reporting for any given year to be complete until five years later. Indeed, the table above tells

[3] *Ibid.* p.38 (footnote 30)

us that the RIA data, extracted in early 2015, were complete for 2009 as evidenced by the fact that subsequent downloads of the database do not indicate additional accidents but were incomplete for 2010. This is likely due to the fact that at least six months' worth of additional reporting for the year 2010 came in after data were extracted in "early" 2015. If reporting is done every five years, we would expect reporting to be complete for any given year only after a full five years have passed. For the same reason, as can be seen in the table, data extracted in March 2018 are incomplete for all years after 2012. Hence, an extraction done in March 2018 the covers only the years 2014-2016 does not contain any complete data. The 2014 data are uncounted by more than 7%. The 2015 data are undercounted by over 28% and the 2016 data are undercounted by almost 25%. Similarly, the May 2021 database shows additional impact accidents for the years 2015-2019 compared to the September 2019 database for 2015 and later years, but not for years prior to that. This provides additional support for the fact that the latest year for which data from any given database extraction are complete is five years before the full year preceding the date of the extraction.

An additional problem with Prero's assertion is that it is based on numbers of accidents and not on accident rates. The total number of accidents could decline simply because facilities close or move to other countries. This would not be evidence of the effectiveness of existing regulations. Rates measure the effectiveness of regulations by taking into account changes in the number of facilities. When the Kendall rank correlation coefficient[4] is used to analyze accident rates, we find that there is no statistically significant change in rates for the period 2004-2015 (Correlation Coefficient: -.091, Sig. (2-tailed): .681). Moreover, for the years 2010-2015, there is a non-statistically significant *increase* in impact accident rates as can be seen in Figure 1 below.



[4] Kendall, M. G. (1938). A new measure of rank correlation. *Biometrika*, *30*(1/2), 81-93.

The California Refinery Rule Provides Evidence in Support of Hazard Reduction Requirements

The California rule for Process Safety Management for Petroleum Refineries includes many of the elements proposed above for inclusion in the Risk Management Plan Rule. Its effective date was October 1, 2017. Since that time reductions have been achieved in accident rates (Figure 2), injury and illness rates (Figure 3) and rates of evacuation/sheltering in place (Figure 4). This demonstrates the effectiveness of a rule that goes well beyond the existing RMP rule and incorporates many of the provisions discussed above.

Figure 2:
Number of Impact Accidents per 1000 Facility Years
Before and After Implementation of California Refinery PSM Rule

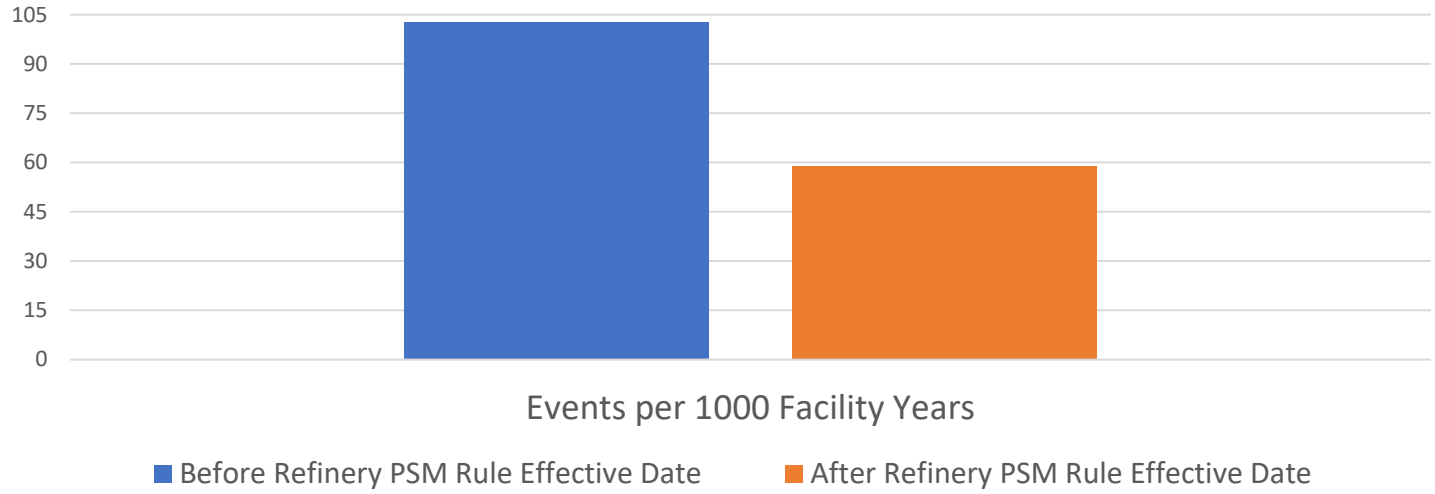
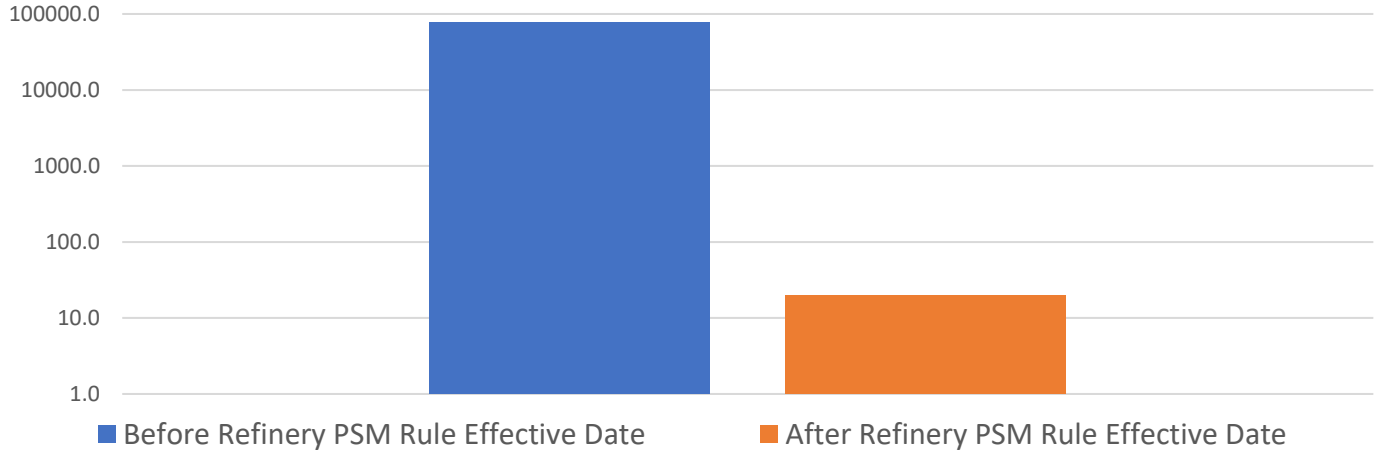
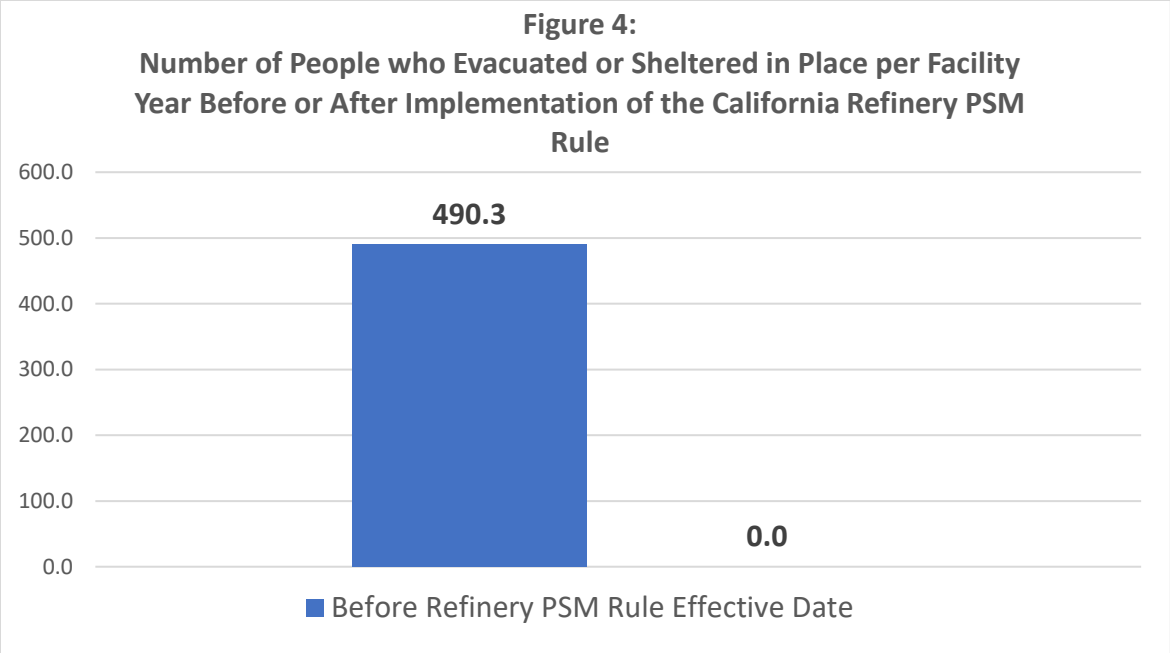


Figure 3:
Number of Injuries and Illnesses per 1000 Facility Years
Before and After Effective Date of California Refinery PSM Rule





Zip Codes with High Percentages of Poor People are Overburdened with RMP-Covered Facilities and with Injuries and Illnesses due to RMP-Reportable Impact Accidents

Correlation analysis found a statistically significant relationship between the percentage of people in a zip code whose incomes are below 200% of the poverty level and the average number of RMP-covered facilities that operated in the zip code for some part of the time between 2004 and 2015 (Spearman's rho: 0.111, $p = 1.876 \times 10^{-25}$). This is illustrated in Figure 5. Similar analysis found a statistically significant relationship between the percentage of people in in a zip code whose incomes are below 200% of the poverty level and the average number of injuries and/or illnesses due to RMP-reportable impact accidents that occurred in the zip code between 2004 and 2015 (Spearman's rho: 0.079, $p = 0.022$). This is illustrated in Figure 6. The relationship is likely to be stronger than shown in these analyses because the analyses include only zip codes with at least one RMP-covered facility. They do not include zip codes with no RMP facilities, which may be on average, wealthier than zip codes with one or more facilities.

Figure 5:
Relationship of Poverty to Presence of RMP Covered Facilities 2004-2015

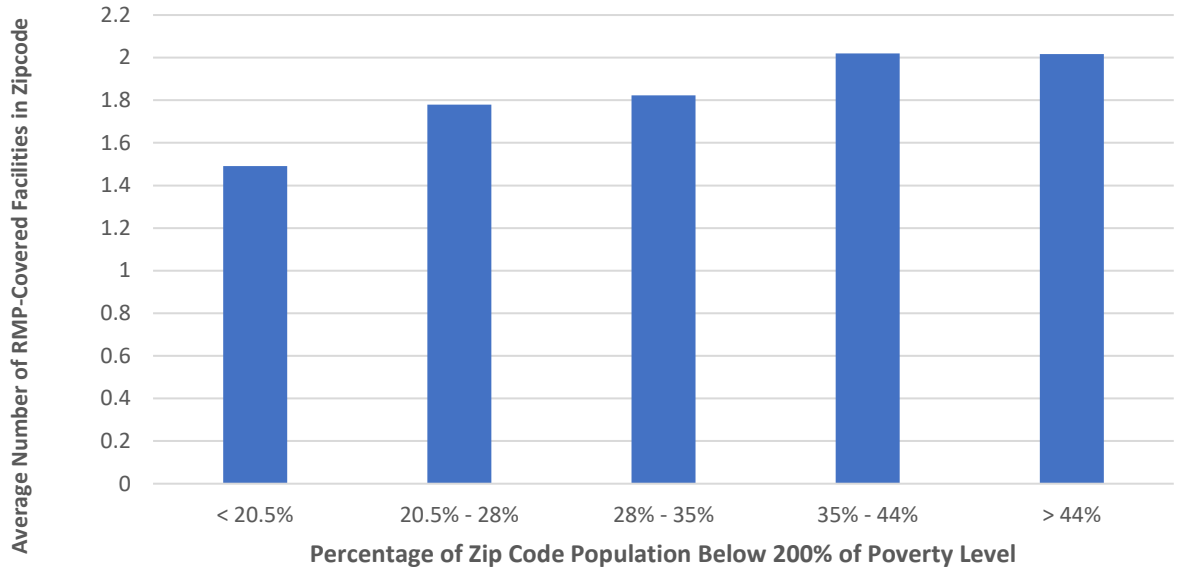
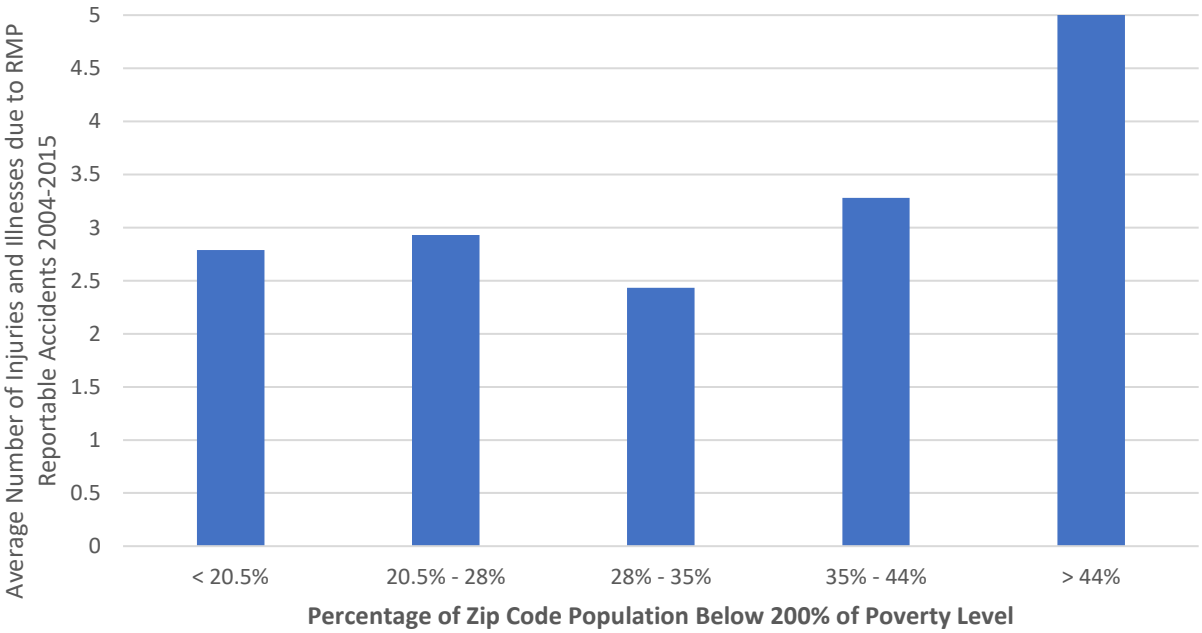
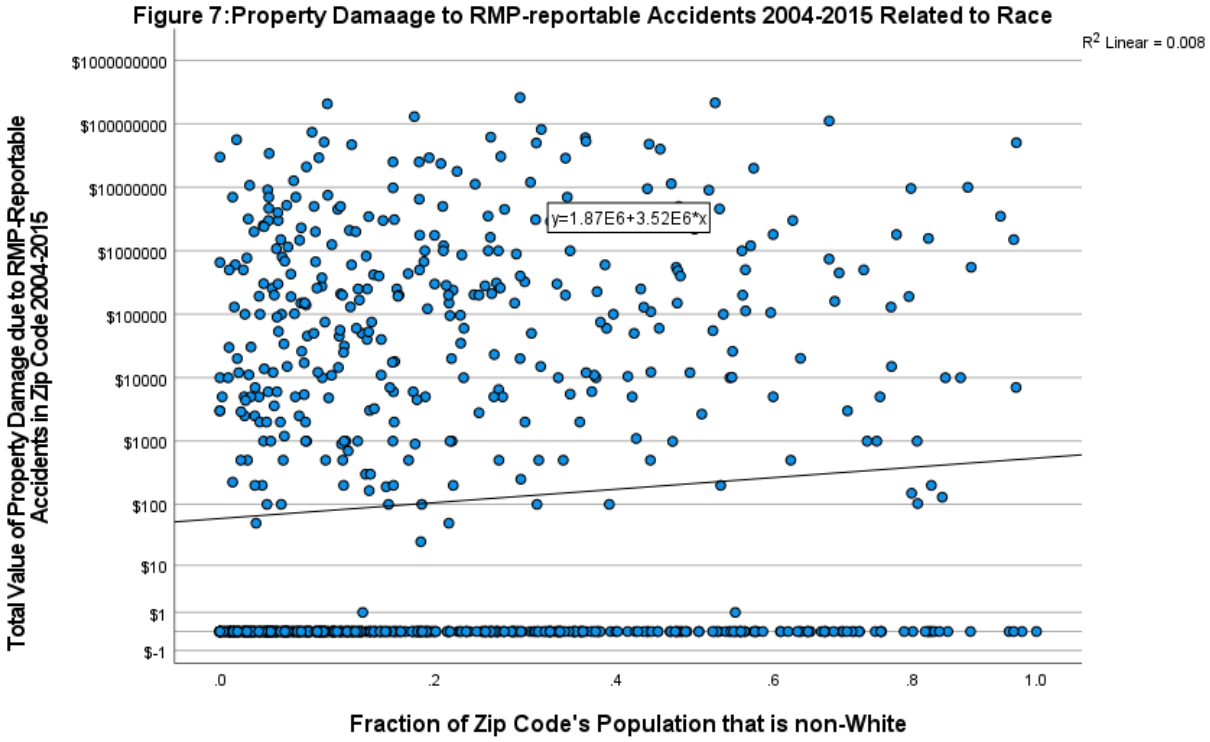


Figure 6:
Relationship of Poverty to Injuries and Illnesses due to RMP-Reportable Accidents 2004-2015



Zip Codes with High Percentages of People of Color are Overburdened with RMP-Covered Facilities, Impact Accidents, Injuries and Illnesses and Property Damage



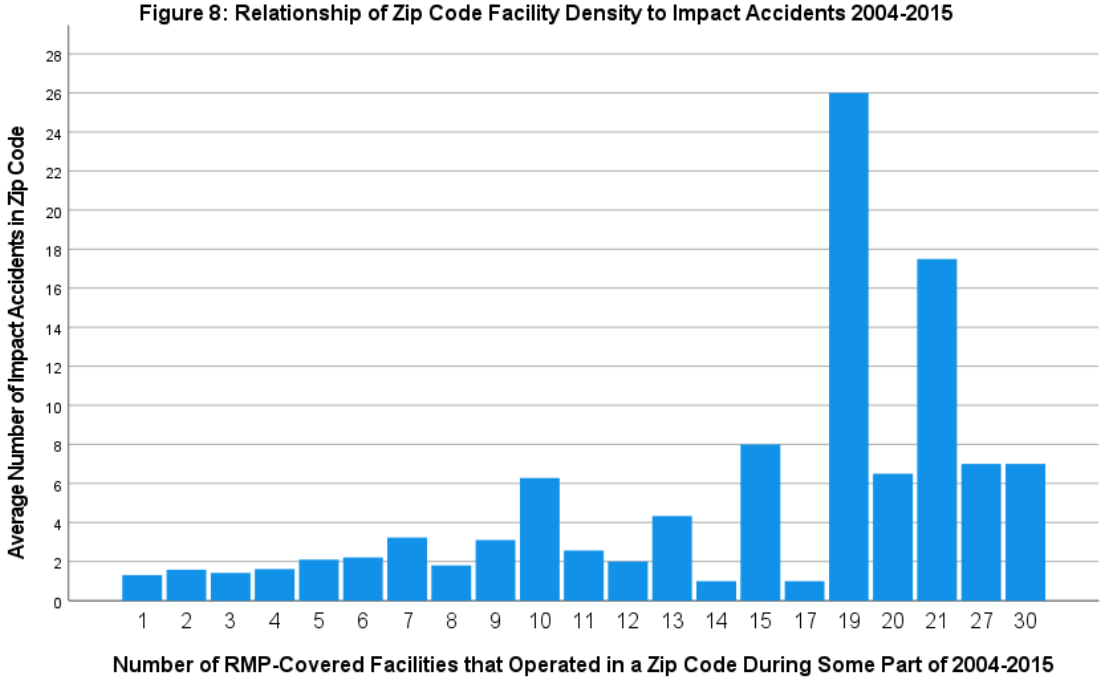
Correlation analysis found a statistically significant relationship between the percentage of non-white people in in a zip code and the average number of RMP-covered facilities that operated in the zip code for some part of the time between 2004 and 2015 (Spearman's rho: 0.138, $p = 1.38 \times 10^{-38}$). In addition, percentage of non-white people in a zip code was correlated with the number of impact accidents that occurred in the zip code between 2004 and 2015 (Spearman's rho: 0.13, $p = 1.62 \times 10^{-4}$), injuries and/or illnesses (Spearman's rho: 0.092, p = 0.008), and property damage (Spearman's rho: 0.109, p = 0.002, See Figure 7). The relationship is likely to be stronger than shown in these analyses because the analyses include only zip codes with at least one RMP-covered facility. They do not include zip codes with no RMP facilities, which may be on average, whiter than zip codes with one or more facilities.

Zip Codes with More RMP-Covered Facilities Experience More Impact Accidents, Injuries and Illnesses and Property Damage

Correlation analysis found a statistically significant relationship between the number of RMP-covered facilities that operated in the zip code for some part of the time between 2004 and 2015 and the number of impact accidents that occurred in a zip code during that time (Spearman's rho: 0.26, $p = 7.97 \times 10^{-15}$, See Figure 8). In addition, number of RMP-covered facilities in a zip

code was correlated with injuries and illnesses (Spearman's rho: 0.083, p = 0.015., See Figure 9), and property damage (Spearman's rho: 0.197, p = 5.58×10^{-9}, See Figure 10).

Figure 8: Relationship of Zip Code Facility Density to Impact Accidents 2004-2015



Fiogure 9: Relationship of Facility Density to Injuries and illnesses 2004-2015

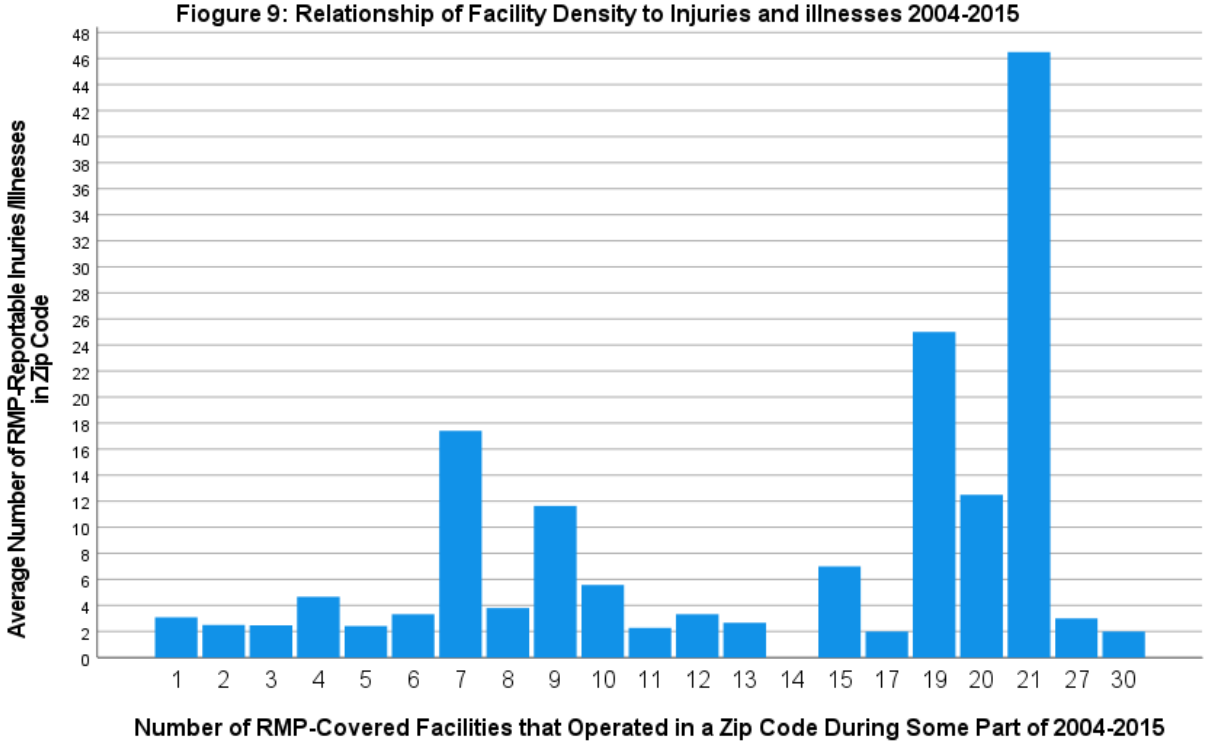
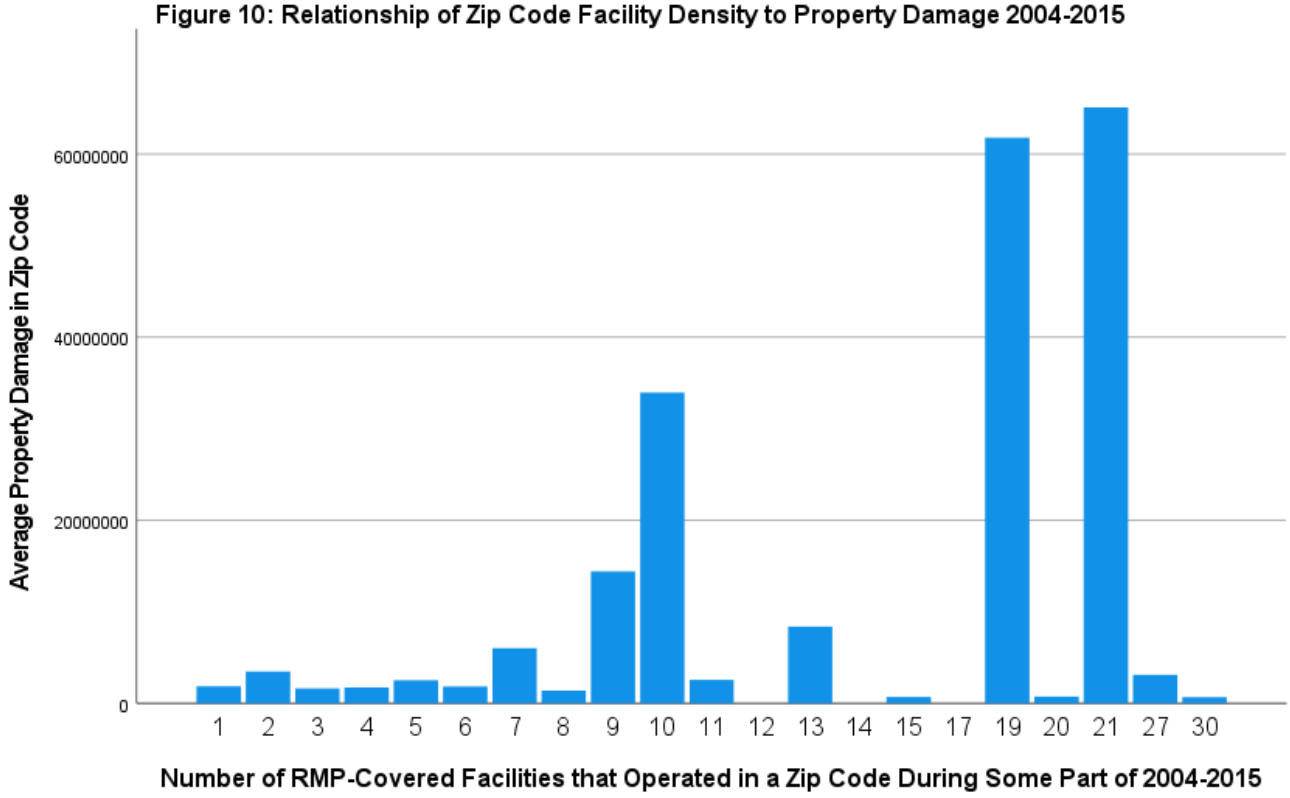


Figure 10: Relationship of Zip Code Facility Density to Property Damage 2004-2015



Conclusion

Those who say that there is no need to strengthen the Risk Management Plan Rule are basing their arguments on outdated, inaccurate data. There was no statistically significant change in impact accident rates between 2004 and 2015. There was in fact, a non-statistically significant increase in rates between 2010 and 2015. The UAW calls for strengthening the RMP rule as follows:

- To bolster the safety of workers, the rule should require worker and union participation in incident prevention, investigation, and response. It should require worker training in order to enhance safety and facilitate meaningful participation.

- It should prevent chemical disasters by ensuring hazard reduction**,** not merely improved response to preventable disasters. This should be done by requiring the identification and use of available inherently safer methods to eliminate or reduce catastrophic hazards.

- The rule should address disproportionate, cumulative impacts for communities with multiple RMP facilities.

- The rule should restore and implement essential requirements for safer chemicals, technologies and practices, worker training, third-party audits, root cause analysis, deregistration analysis, and emergency exercises.

Data from the EPA Risk Management Plan Database show that:

- After the effective date of the California Refinery Process Safety Management Rule, which includes worker participation and safer technologies, there were reductions in impact accident rates, injury and illness rates and rates of evacuating and/or taking shelter.

- Zip codes with high percentages of poor people are overburdened with RMP-covered facilities and with Injuries and Illnesses due to RMP-reportable impact accidents.

- Zip codes with high percentages of people of color are overburdened with RMP-covered facilities, impact accidents, injuries and illnesses and property damage due to RMP-reportable accidents.

- Zip Codes with more RMP-covered facilities experience more impact accidents, injuries and illnesses and property damage.

Technical Appendix

This appendix describes the data analysis methods used to produce the table, figures and statistical analyses above.

For the table entitled *Comparison of Number of Impact Accidents Reported in EPA's 2019 Regulatory Impact Analysis with the Number Identified from the September 2019 Database and the May 2021 Database*, the analysis was done as follows:

Accidents were extracted from the database using the variables "EPAFacilityID" and "AccidentDate" and the Min function in Microsoft Access to instruct the database to extract the smallest values onsite and offsite deaths, injuries (including hospitalization and medical care), and property damage, evacuations, or sheltering in place. This is a scientifically conservative way of both avoiding counting the same accident more than once and overestimating its impact. Accidents were counted as impact accidents if one or more of the above values was greater than zero. The total number of such accidents for each year was reported in the table. For the figures the following methods were used:

Figure 1

The calculation of rates requires denominators. The most appropriate unit for the denominator is the facility-year, which was calculated as follows:

1. Each facility was considered to have entered the program on the postmark date of its first report (postmark date was chosen over receipt date because EPA assigned the anniversary date at five years after the postmark date, rather than five years after the receipt date).

2. Facilities were considered to have left the program on their deregistration effective dates (deregistration effective dates are frequently identical or very close to deregistration dates, but where they differ, the deregistration effective date is when the facility was no longer covered by the program and the deregistration date is when EPA was informed of that fact. Hence the deregistration effective date was chosen. A few facilities reported more than one deregistration effective date. The latest such date was chosen.)

3. In the year of entry into the program, each facility was credited with the fraction of the year in which it participated. (For example, a facility that entered on May 31 would be credited with $^{7}/_{12}$ year.)

4. In the year of deregistration (for those facilities that deregistered), each facility was credited with the fraction of the year in which it participated. (For example, a facility that deregistered on May 31 would be credited with $^{5}/_{12}$ year.)

5. If entry and deregistration occurred in the same year, each facility was credited with the fraction of a year between entry and deregistration.

6. For the years between entry and deregistration, each facility was credited with a full year.

7. The total number of facility-years in each calendar year was calculated using an excel spreadsheet.

8. Rates were calculated by using the total number of accidents for a year divided by the number of facility years

9. In order to avoid artificially inflating accident rates, an accident was excluded from the numerator if it occurred before the postmark date of a facility's first report or after the facility's deregistration effective date.

10. In order to determine whether there was a meaningful trend over time (decline or increase) Kendall's Tau was applied to a data set containing the value for the variable Year with the range 2004-2015 and the variable Accident Rate corresponding to the years in question.

Figures 2-4

Accident data were extracted as described above. Facility-years were calculated as described above. Analysis was restricted to California facilities with NAICS code 32411. In addition, facilities were excluded if they had not filed a report after the effective date of the California Refinery PSM rule which was October 1, 2017. The variable "Injuries and Illnesses" (Figure 3) represents the sum of the values following variables: "InjuriesWorkers", "InjuriesPublicResponders", "InjuriesPublic", "Hospitalization", "MedicalTreatment". The variable "Number of People who Evacuated or Sheltered in Place" (Figure 4) represents the sum of "Evacuated" and "Sheltered in Place."

Figures 5 - 7

Microsoft Access was used to sum the number of facilities by zip code. A facility was excluded if the postmark date of a facility's first report was after 2015 or its deregistration effective date was before 2004. "Injuries and Illnesses" (Figure 6) is calculated as described above. "Property Damage" (Figure 7) is the sum of the values of "OnsitePropertyDamage" and "OffsitePropertyDamage." These data were matched by zip code with income and race data

from the American Community Survey[5]. Spearman's rho was used for nonparametric correlation analysis.

Figures 8-10

Number of facilities were aggregated by zip code as described above. Impact accidents, injuries and illnesses and property damage were calculated as described above and aggregated by zip code. Spearman's rho was used for nonparametric correlation analysis.

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[5] United States Bureau of the Census (2019). *2019 American Community Survey*.